

## **OIL AND GAS INDUSTRY AUTOMATION TRENDS IN THE MODERN WORLD**

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This thesis describes the technological and organizational processes in the oil and gas industry in Russia. Some of the factors that influence the automation processes and some automation systems are touched upon. The problems of the development of the oil and gas industry in Russia are also described.

Due to the introduction of new technologies, the Russian oil and gas industry is undergoing large-scale development. One of the significant areas of innovative development of the industry is automation. This direction meets modern requirements for the organization of production and reduces the role of man in the management of the technological process. The main results of the process are considered to be an increase in labor productivity and rational use of resources.

New technologies that increase the level of automation can generate additional profit or reduce costs. These aspects are considered as performance criteria. It should be noted that the payback period for automation equipment rarely exceeds one year.

Automation is necessary at all stages of the technological cycle in the oil and gas industry, and also solves a number of problems. This direction also includes informatization, that is, the process of integrating computer facilities. The purpose of this process is to effectively organize productive activities. It is the process of informatization in the industry that leads to the creation and implementation of Automated Information Systems (AIS). AIS is the software and hardware required to automate any activity.

The main focus of AIS is the Geographic Information System (GIS), which involves graphic visualization. However, despite the high-tech tools, the technological process requires the introduction of new effective systems for modeling processes with a detailed description of the control means.

At the moment, the Mobile Automation System is indispensable for many specialists in the oil and gas industry. Thanks to convenient devices, the specialist has access to all information resources of the oil and gas industry.

Thus, we can conclude about the variety of automated information systems in industry. However, on the market there is an acute question of attracting generalists in information technology to enterprises. A professional with extensive

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general knowledge and skills is able to quickly learn in varieties of computer and controlled technology.

In conclusion, it is worth highlighting the problems that the oil and gas industry faces: lack of basic parts for electronics in Russia; loss of years of experience in engineering schools; lack of support for small and medium-sized enterprises that produce high-tech equipment; lack of funds for the introduction of new high-tech equipment in enterprises; lack of qualified specialists.

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